

ABSTRACT OF THE DISCLOSURE

A reactor system for reacting a hydrocarbon or hydrocarbon derivative charging material comprises a catalyst-coated reaction chamber, to which a reaction educt stream can be fed through a reaction chamber inlet, and electric heating means. The reaction chamber inlet has a flat, electrically heatable, catalyst-coated, and reaction educt stream- permeable heater, which covers at least partially the inlet cross section of the reaction chamber inlet and through which the educts for reacting the charging material can be fed at least in a start operating phase of the reactor system. An electric heater may be provided in front of the reaction chamber inlet, for the purpose of heating at least one reaction educt in a start operating phase and there are means for point-by-point injection of at least one reaction educt, heated in the heater, into the reaction chamber.